

ABSTRACT

A Luneberg lens having a single-layer structure or a multilayer structure containing a plurality of layers having different dielectric constants, wherein the respective structure is produced by mixing a polyolefin resin and/or a derivative thereof with an inorganic filler having a high dielectric constant, the volume ratio of the polyolefin resin and/or the derivative thereof to the filler being 99 to 50 : 1 to 50, adding a foaming agent to the resulting resin mixture and then performing preliminary expansion, and molding the resulting pre-expanded beads; and wherein at least a foamed dielectric layer having a dielectric constant of 1.5 or more is formed using the pre-expanded beads that have been subjected to classification and selection such that $f(A)$ satisfies the expression $0.0005 \leq f(A) \leq 0.1$, where $f(A)$ is represented by the equation: $f(A) = \sigma a / A_{ave}$, σa is the deviation of a gas volume fraction A_r in the foamed dielectric layer, and A_{ave} is the average of the gas volume fractions A_r at positions in the foamed dielectric layer.